

CHAPTER 10
OPERATION OF CONTROL GUN (CGUN)
LESSON PLAN 10

METHOD:

Conference, demonstration, and practical exercise

TIME ALLOTTED:

1.0 hour

COURSE PRESENTED TO:

- a. Instructors
- b. Unit NCOs
- c. TSC personnel

TOOLS, EQUIPMENT, AND MATERIALS:

See Appendix A

PERSONNEL:

- a. Primary instructor
- b. Assistant instructor

INSTRUCTIONAL AIDS:

- a. Overhead projector
- b. Viewgraphs

REFERENCES:

- a. TM 9-6920-709-12&P-1-2
- b. TM 9-6920-711-12&P-1

APPENDICES:

Appendix A. Tools, Equipment, and Materials
Appendix B. Safety
Appendix C. Student Evaluation
Appendix D. Viewgraphs

10-1. INTRODUCTION.

(5 minutes)

Note. Show Slide 1.

- a. **Reason.** The control gun (CGUN) allows instructors access to many features of TWGSS not normally accessible to the crew. Proper handling and operation of the CGUN gives the instructor an important tool during TWGSS training.

Note. Show Slide 2.

- b. **Training Objective.** In a range environment, given an operational CGUN, LTID-equipped target, and a tank with TWGSS installed, you will perform the following tasks:
 - (1) Discuss CGUN safety regulations.
 - (2) Perform before operation PMCS and operational checks.
 - (3) Operate the CGUN in its various modes.
 - (4) Perform after operation PMCS.
- c. **Procedures.** During this block of instruction we will discuss the safety regulations, pre-operational, operation and post-operational checks of the CGUN. After completion of training, you will be evaluated on your ability to operate the CGUN in all its modes.

10-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE.

(40 minutes)

- a. **Safety Regulations for CGUN.**

Warning. DO NOT aim or fire CGUN at personnel at close range (5 m). The CGUN is an eye-safe (Class 1) laser device without safety restrictions; however, failure to follow this warning may result in injury to personnel.

- (1) Do not fire CGUN at personnel within 5 m.
- (2) Do not fire CGUN at personnel viewing through powered optics at less than 70 m.
- b. **Before Operation PMCS and Operational Checks.**
 - (1) **General PMCS procedures.** If a fault is discovered during inspection, ensure you do the following:
 - (a) Consult TM 9-6920-711-12&P-1, Chapter 3 to determine if CGUN is considered Not Mission Capable (NMC).
 - (b) Tag CGUN with the problem discovered, using DA Form 2402.
 - (c) Report failure on DA Form 2404.
 - (d) Return CGUN to Training Support Center (TSC).

10-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE (Con't).

(2) Inspection and cleaning.

- (a) Check CGUN and sling for loose, missing, or damaged parts.
- (b) Ensure all switches and controls function properly.
- (c) Inspect battery compartment for damage or corrosion.
- (d) Check for scratched or broken scope lenses.
- (e) If there is any dirt or oil on the CGUN, clean with a soft rag.
- (f) Clean optics with lens paper moistened with lens cleaning compound.
- (g) Check storage case for damage.

(3) Installation of battery.

- (a) Set mode switch to position 1 (OFF). The power of the transmitter is switched off.
- (b) Locate battery compartment on side of laser transmitter.
- (c) Loosen thumbscrew and open battery compartment door.
- (d) Insert a BA-9030A battery or its equivalent. Ensure that battery terminals contact battery compartment terminals. Polarity is not required; unit operates with either polarity.
- (e) Close battery compartment door and tighten thumbscrew.

(4) Initialization and test.

- (a) Place mode switch in position 2 (KILL).
- (b) Pull trigger switch and check indicator light.
 - 1. If indicator light stays lit, laser is firing; battery is okay.
 - 2. If indicator light blinks, battery is low. Replace battery.
 - 3. If indicator light does not light, perform troubleshooting IAW TM 9-6920-711-12&P-1, Chapter 3.
- (c) Repeat steps (a) and (b) for mode switch positions 3 through 6.

Caution. DO NOT adjust or move the alignment screws on either the scope or the laser transmitter. The scope and the laser transmitter are aligned by TSC and Contractor Logistic Support (CLS) respectively.

- (d) Select mode switch position 3 (TEST). Fire at an operational TWGSS target system detector at 50 m. If aligned, the laser beam will hit and set off the target system when aimed accurately on the target.
- (e) Return CGUN to TSC if out of alignment.

10-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE (Con't).

c. Operation of CGUN.

- (1) Select mode of operation desired using mode switch on back of laser transmitter.
 - (a) Position 2, KILL, transmits a KILL code which kills any TWGSS/PGS- or MILES-equipped tank/vehicle.
 - (b) Position 3, TEST, transmits a TEST code causing TWGSS/PGS strobe light to respond:
 1. No response - target system not operational on that tank/vehicle
 2. One blink - system okay and alive
 - (c) Position 4, ENABLE CONTROL, gives the instructor access to TWGSS/PGS control panel controller functions. These menus are opened by transmitting an ENABLE CONTROL code and allows access for one minute. If the instructor does not access controller functions within one minute, the CGUN must be fired again to gain access. Once accessed by the instructor, there is no time limit in controller functions. When the instructor closes the menu, the ability to re-enter is also closed.
 - (d) Position 5, RESET, transmits a RESET code, causing a killed tank/vehicle to reset to normal operation. When a tank/vehicle is reset with the CGUN, the ammunition count of that tank/vehicle returns to the original amount programmed on the TDRS memory card.
 - (e) Position 6, TIME MARK, stores a time mark on TWGSS/PGS TDRS memory cards indicating the time of day of an event. This can be used for AAR purposes.
- (2) Looking through scope, locate and aim at one retro detector unit mounted on a TWGSS equipped tank. Tank must be within 2000 m.
- (3) Fire CGUN by pulling trigger ONE time for each function. Do not hold trigger or multiple signals will be transmitted.
- (4) Observe target, TWGSS strobe lights indicate if the code has been received. For RESET, the strobe lights stop flashing. For all other codes, the strobe lights flash.
- (5) If firing is unsuccessful, observe indicator light on back of CGUN to verify function.
 - (a) If indicator light stays lit, laser is firing; battery is okay.
 - (b) If indicator light flashes, battery is low. Replace battery.
 - (c) If indicator light does not light, perform troubleshooting IAW TM 9-6920-711-12&P-1, Chapter 3.

10-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE (Con't).

d. After Operation PMCS.

- (1) If a fault is found during inspection, ensure you do the following:
 - (a) Consult TM 9-6920-711-12&P-1, Chapter 3 to determine if CGUN is considered NMC.
 - (b) Tag CGUN with problem discovered, using DA Form 2402.
 - (c) Report failure on DA Form 2404.
 - (d) Return CGUN to TSC.
- (2) Remove battery from battery compartment.
- (3) Check CGUN and sling for loose, missing, or damaged parts.
- (4) Ensure all switches and controls function properly.
- (5) Inspect battery compartment for damage or corrosion.
- (6) Check for scratched or broken scope lenses.
- (7) If there is any dirt or oil on the CGUN, clean with a soft rag.
- (8) Clean optics with lens paper moistened with lens cleaning compound.

Caution. Damage to CGUN could occur if stored in a wet storage case.

- (9) Check storage case for damage. If storage case is wet, dry before storage.
- (10) Store CGUN in storage case.

10-3. TEST. (5 minutes/test)

Note. See Appendix C.

10-4. FINAL REVIEW. (5 minutes)

a. Student Questions.

Note. Show Slide 3.

b. Summary of Main Teaching Points.

- (1) Safety regulations
- (2) Before operation PMCS and operational checks
- (3) Operation of CGUN in its various modes
- (4) After operation PMCS

Note. Show Slide 4.

10-4. FINAL REVIEW (Con't).

- c. **Closing Statement.** This block of instruction has prepared you to properly inspect, place into operation, and safely use and maintain the CGUN.

**APPENDIX A
TO LESSON PLAN 10**

OPERATION OF CONTROL GUN (CGUN)

TOOLS, EQUIPMENT, AND MATERIALS

1. Control gun (CGUN)
2. M1A2 series tank with TWGSS installed
3. TM 9-6920-711-12&P-1
4. Expendable/durable items (see Appendix D, TM 9-6920-711-12&P-1)
5. DA Form 2404
6. DA Form 2402
7. MILES LTID set
8. Target lifter
9. Panel target, T80 frontal
10. Training area with a minimum of 1200 m of maneuver space

APPENDIX B TO LESSON PLAN 10

OPERATION OF CONTROL GUN (CGUN)

SAFETY

Listed general safety regulations are to be strictly enforced during operation of CGUN.

1. Never look directly into the laser beam of the CGUN.
2. Never fire the laser into the eyes of soldiers if they are closer than 5 m.
3. Never fire the CGUN at personnel with powered optics if they are closer than 70 m.

**APPENDIX C
TO LESSON PLAN 10**

OPERATION OF CONTROL GUN (CGUN)

STUDENT EVALUATION

NAME _____ RANK _____ UNIT _____

	GO	NO GO
1. Operated CGUN in accordance with safety regulations outlined in class?	_____	_____
2. Correctly performed before operation PMCS and operational checks?	_____	_____
3. Properly operated CGUN in all modes of operation?	_____	_____
4. Correctly performed after operation PMCS?	_____	_____

EVALUATOR _____ DATE _____

**APPENDIX D
TO LESSON PLAN 10**

OPERATION OF CONTROL GUN (CGUN)

VIEWGRAPHS
